

KIC 012456062

Q1-17 DR25 TCE Parameters

| TCE | Run Type | KOI? | Period (Days) | Epoch (BKJD) | Depth (ppm) | Duration (Hours) | MES | SNR | R_{\star} (R_{\odot}) | T_{\star} (K) | R_p (R_{\oplus}) | S_p (S_{\oplus}) |
|--------------|----------|------|---------------|--------------|-------------|------------------|-----|-----|-----------------------------|-----------------|------------------------|------------------------|
| 012456062-01 | OBS | No | 215.301708 | 238.039356 | 441.8 | 4.138 | 7.3 | 6.9 | 0.94 | 6092 | 2.09 | 2.20 |

Robovetter Results

| TCE | Run Type | Disp | Score | N | S | C | E | Comments |
|--------------|----------|------|-------|---|---|---|---|---------------------------------------|
| 012456062-01 | OBS | FP | 0.01 | 1 | 0 | 0 | 0 | LPP_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS |

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

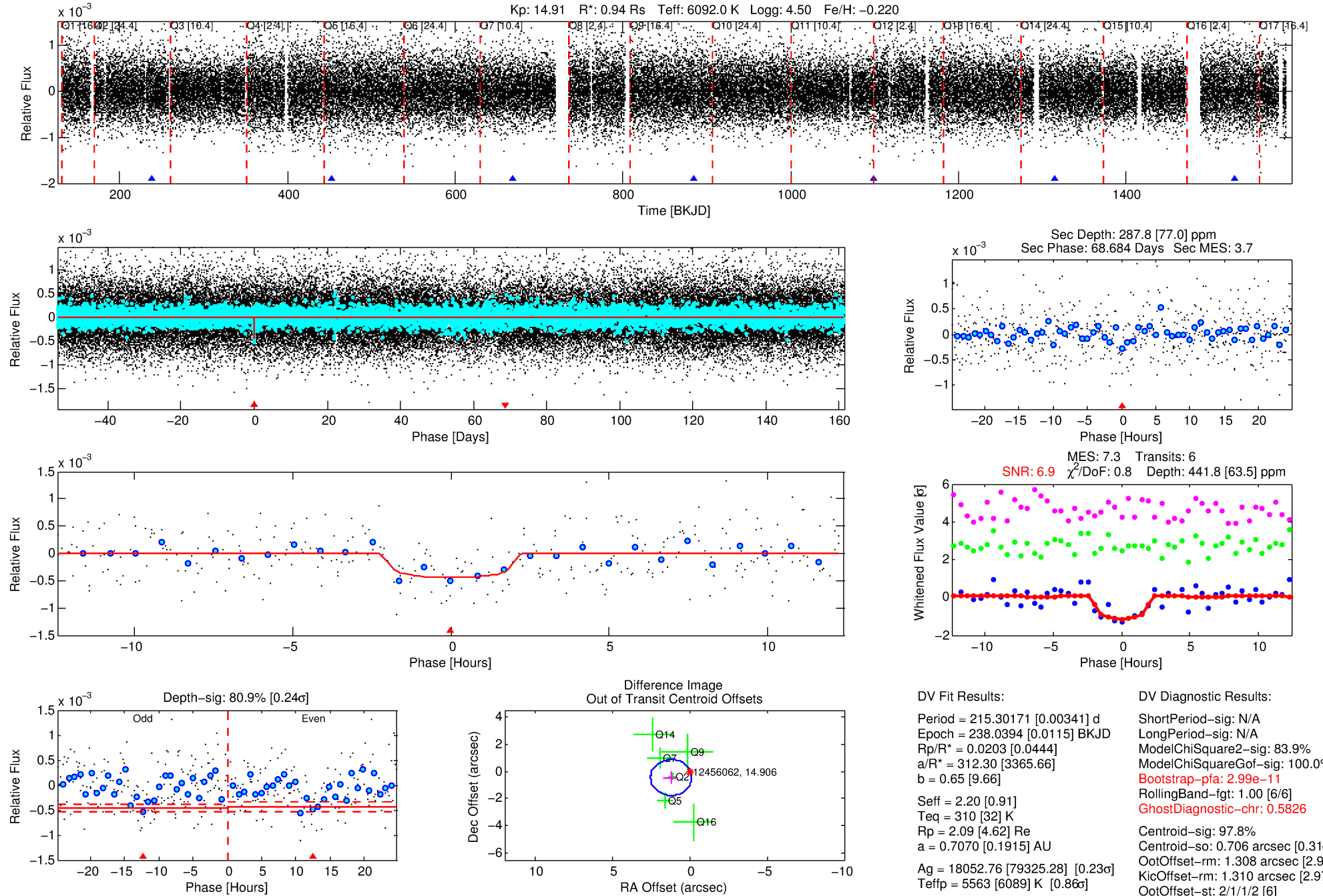
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012456062-01

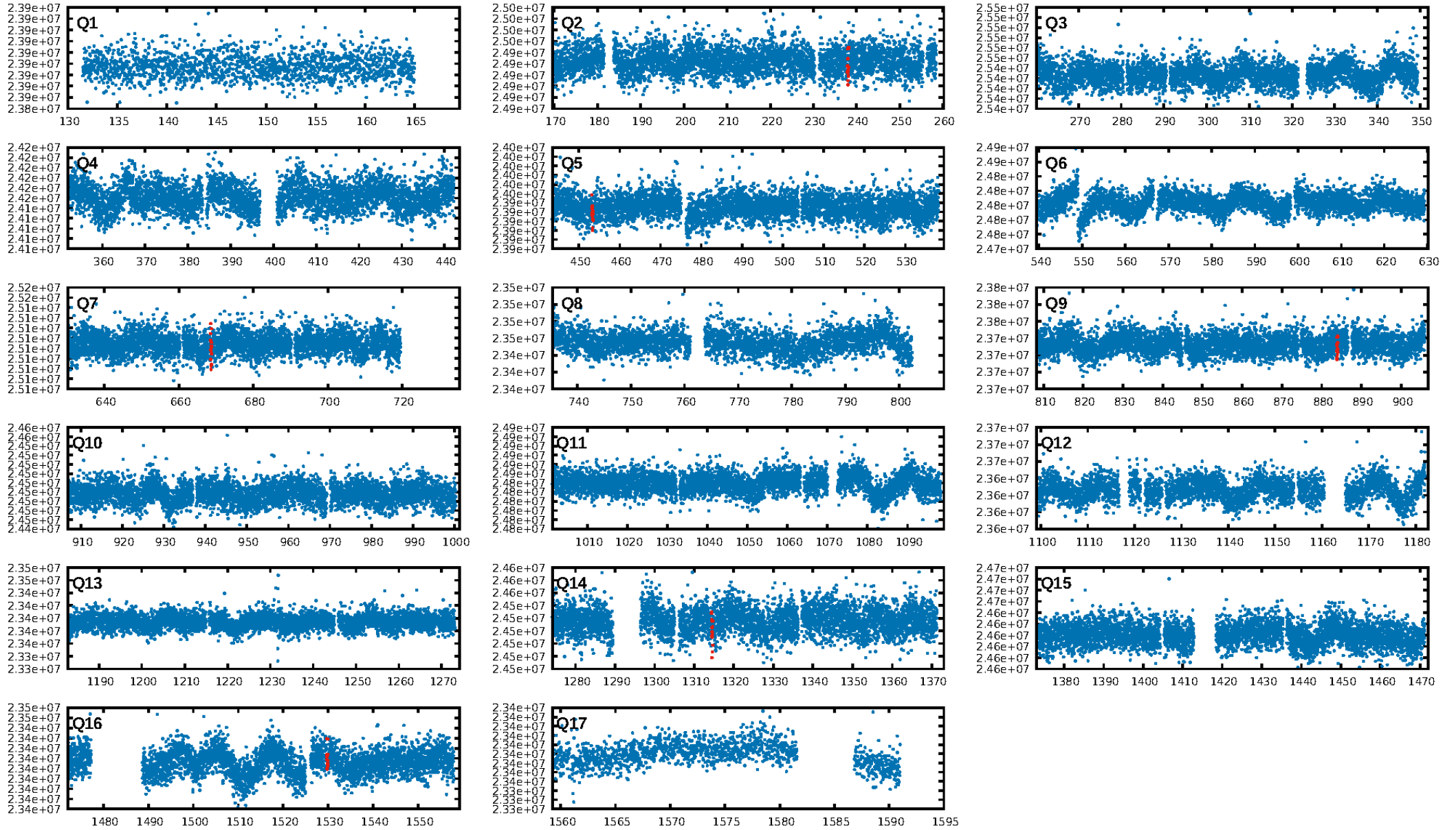
No Significant Match Found

DV One-Page Summary

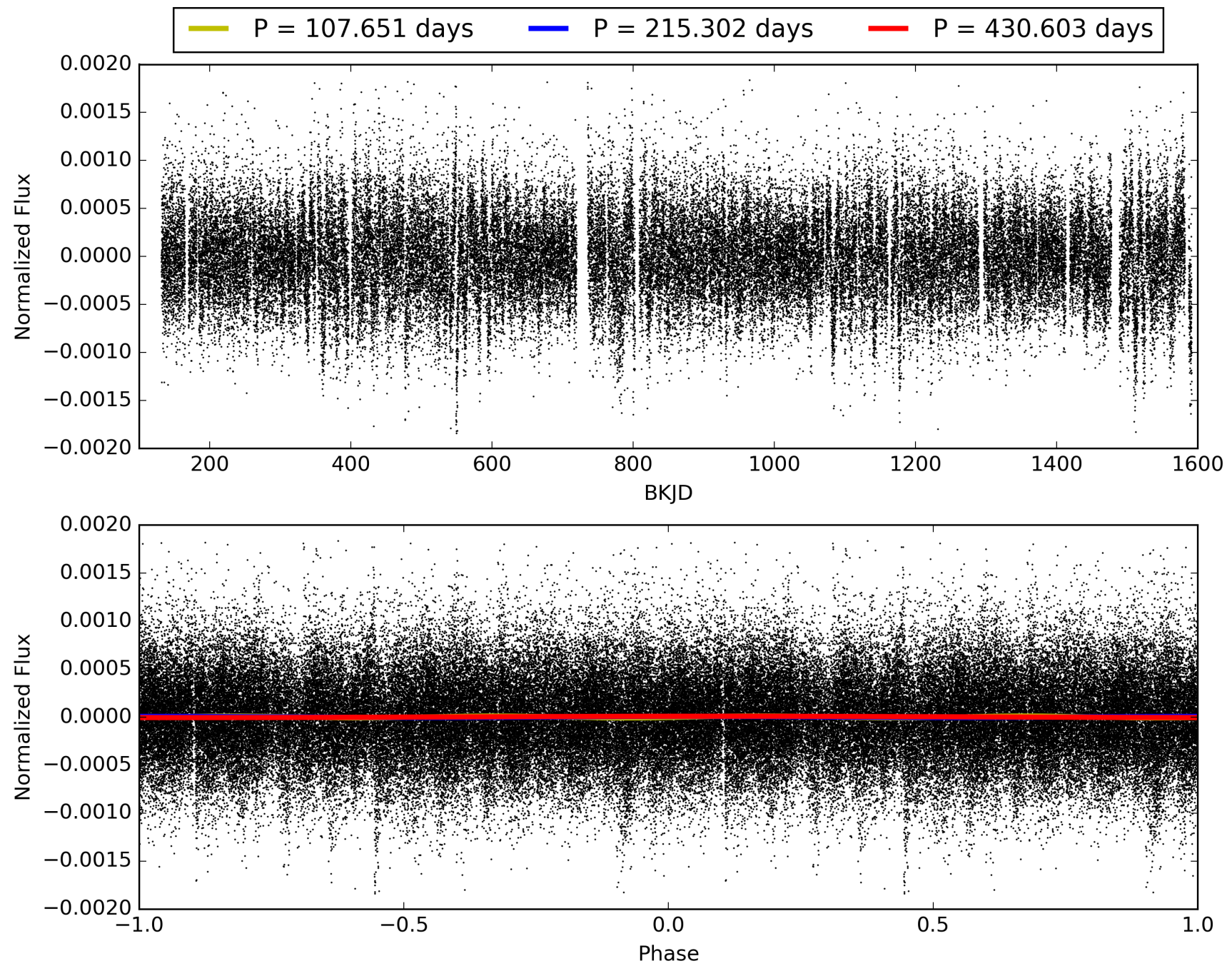
KIC: 12456062 Candidate: 1 of 1 Period: 215.302 d



TCE 012456062-01, PDC Light Curves

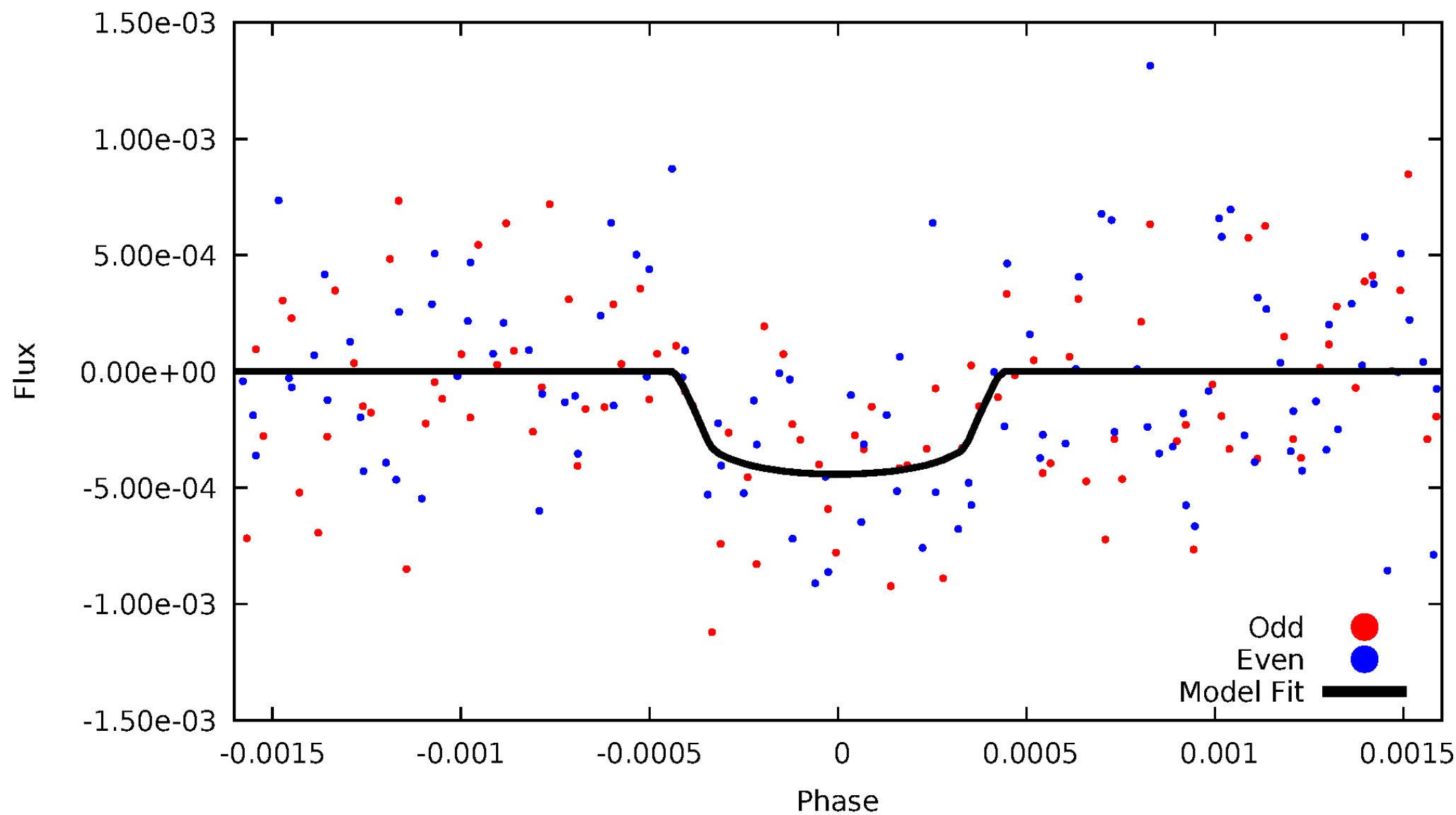


TCE 012456062-01



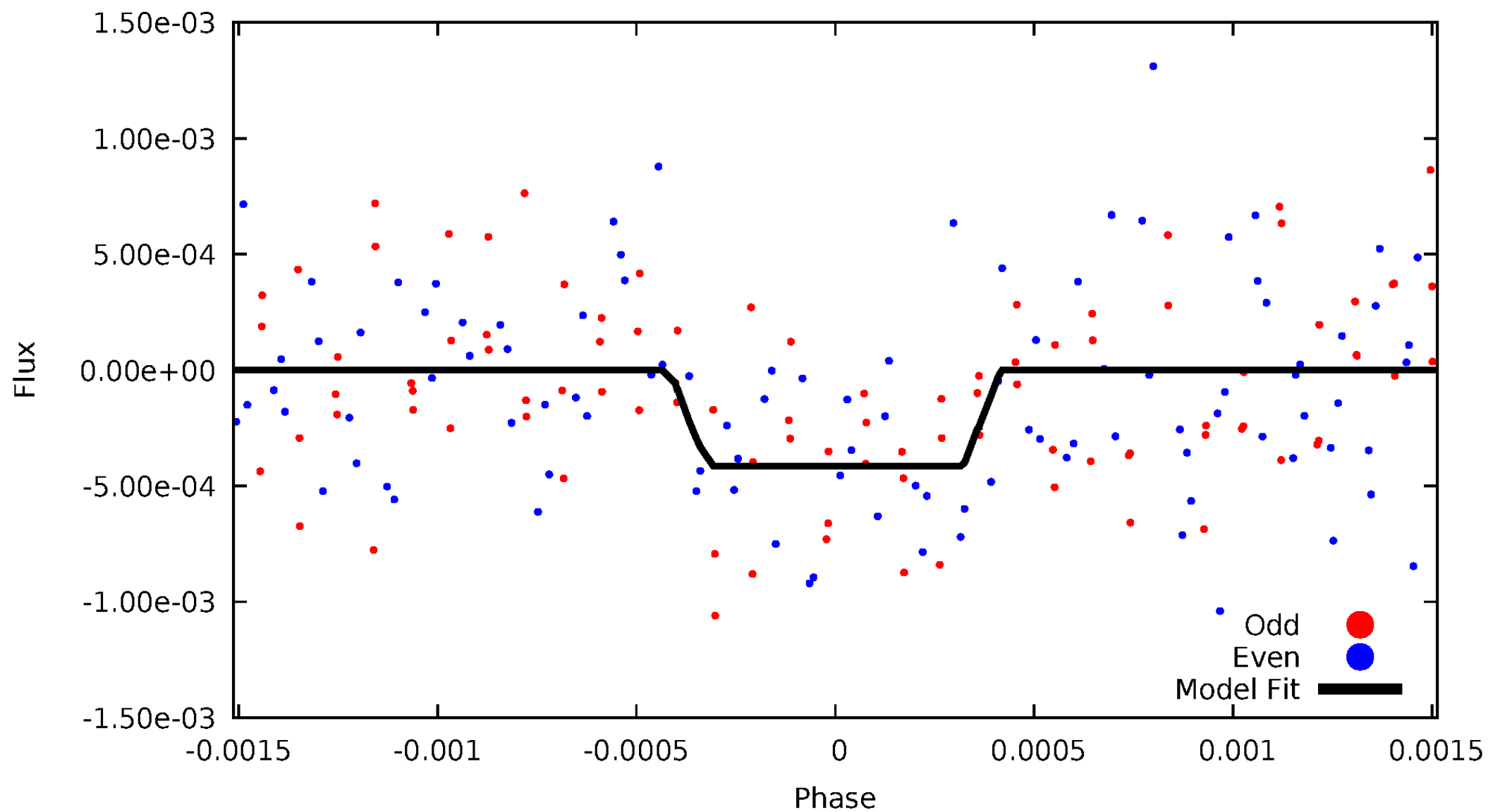
DV Odd/Even

TCE 012456062-01



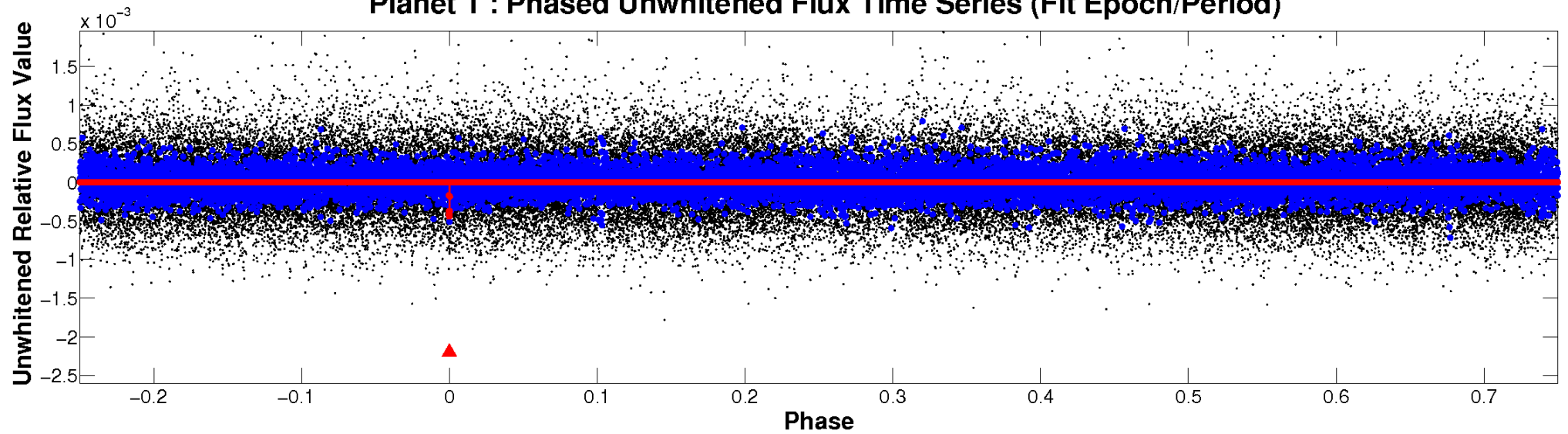
ALT Odd/Even

TCE 012456062-01

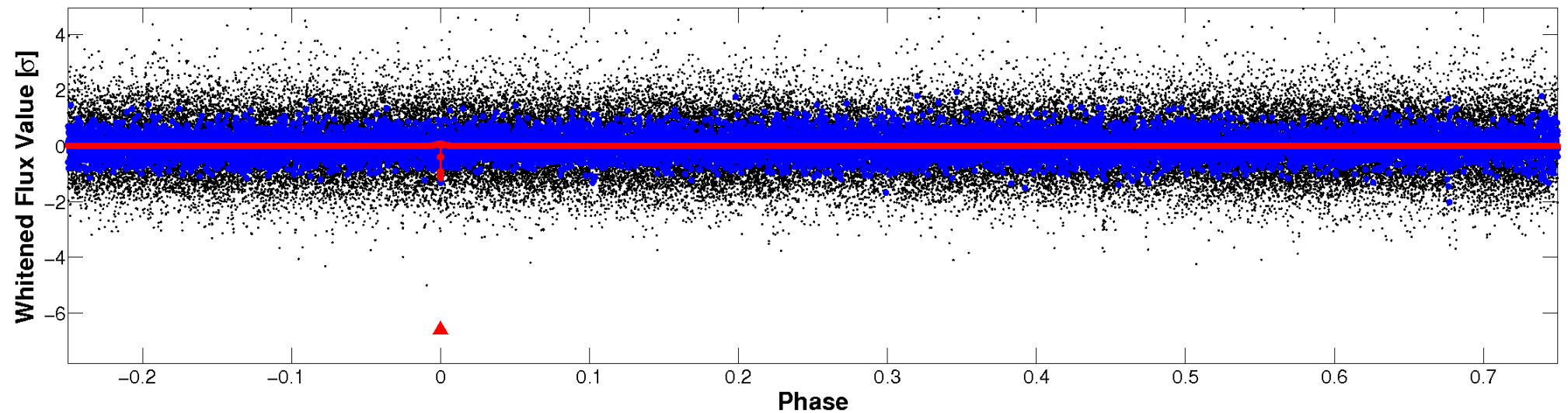


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

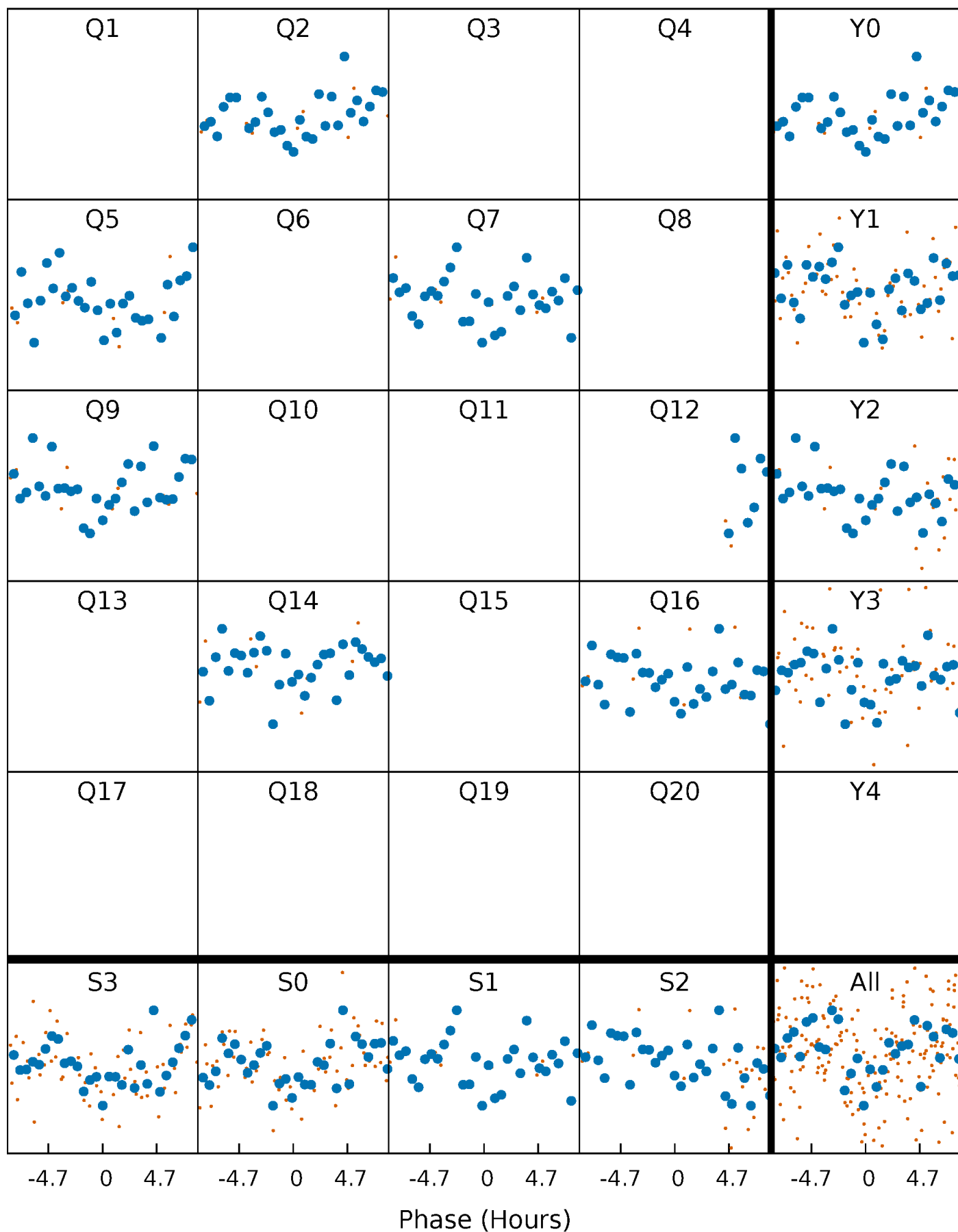


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



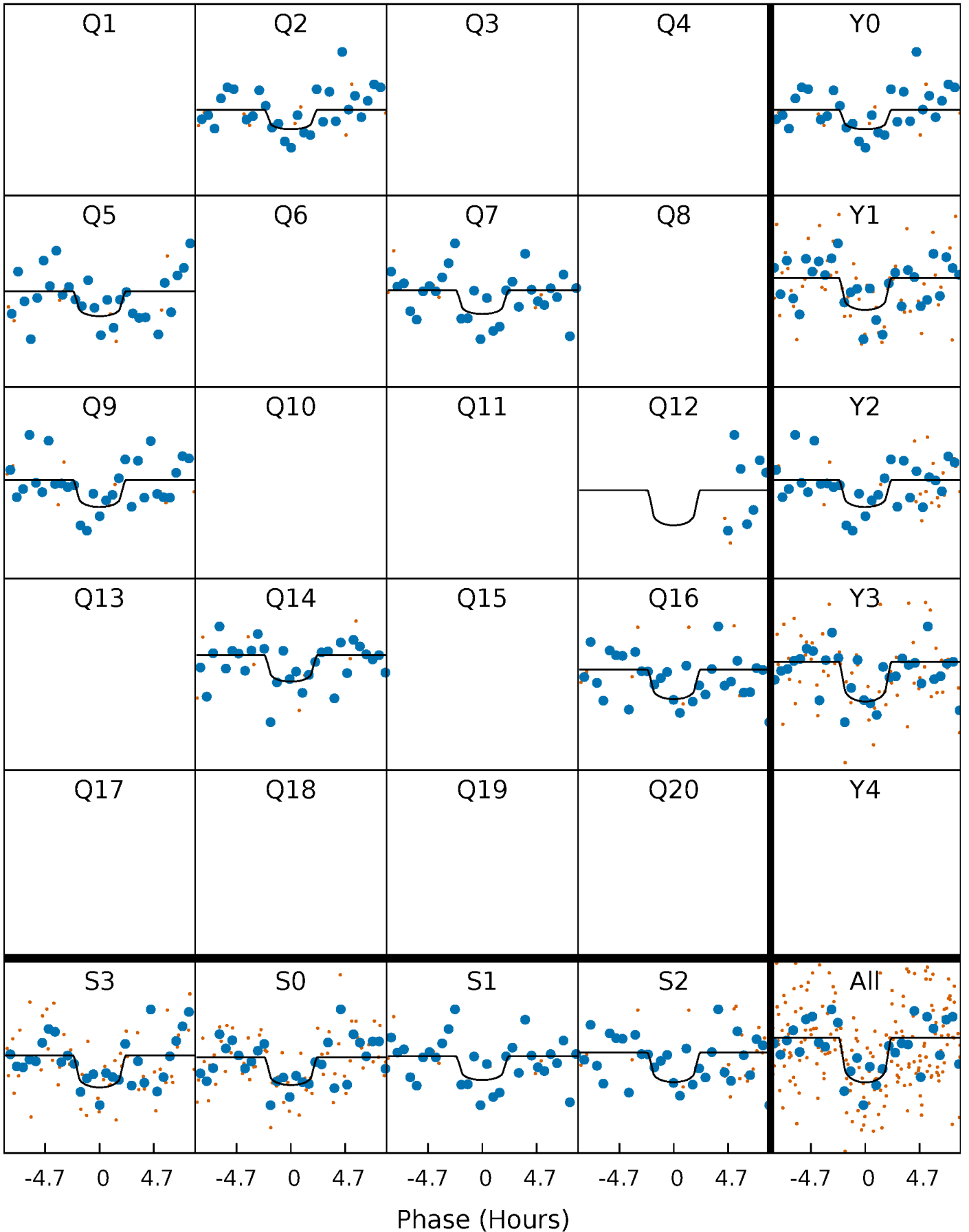
PDC Quarter-Phased Transit Curves

TCE 012456062-01 P=215.301708 Days $T_0=238.039356$ (BKJD)



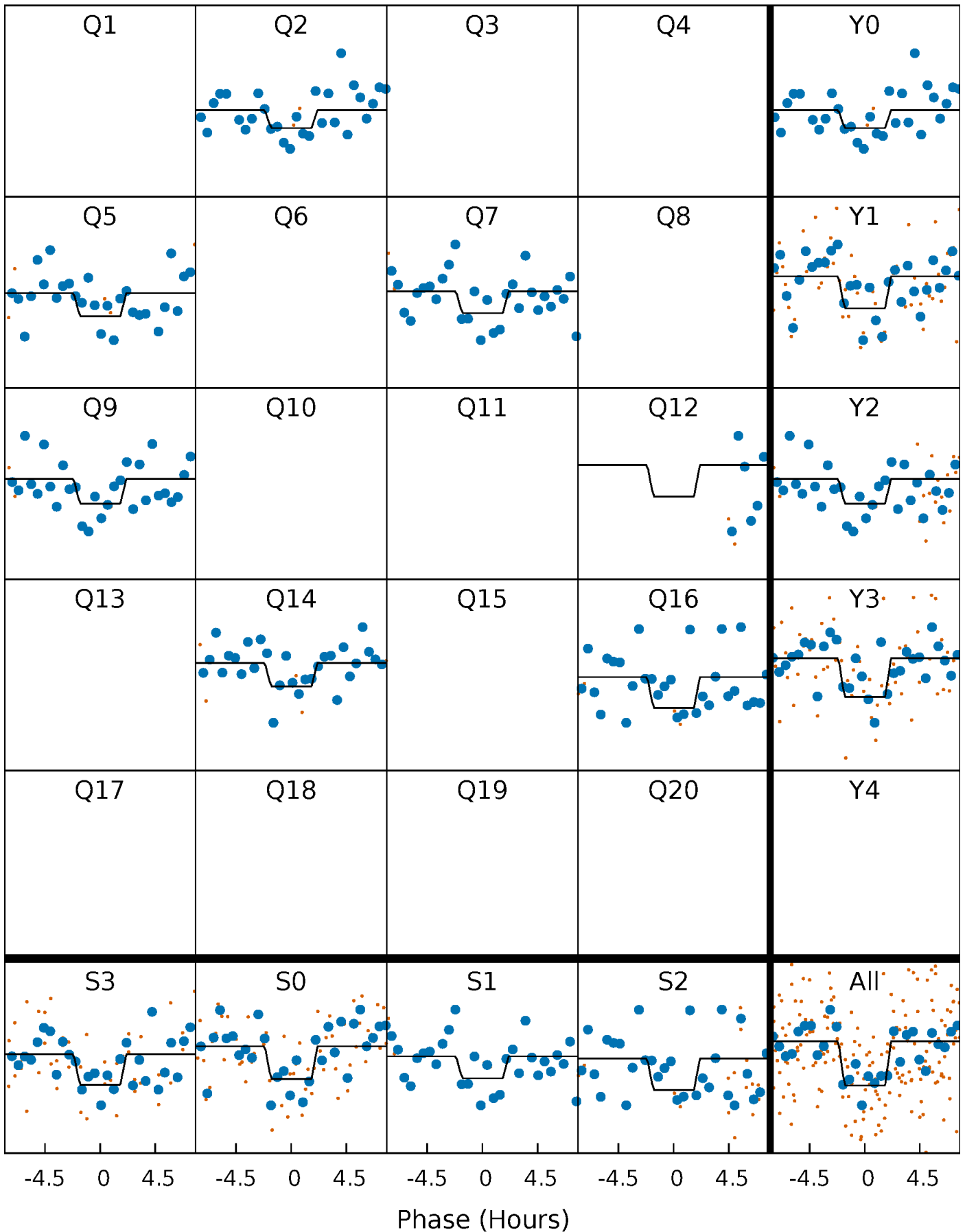
DV Quarter-Phased Transit Curves

TCE 012456062-01 P=215.301708 Days $T_0=238.039356$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

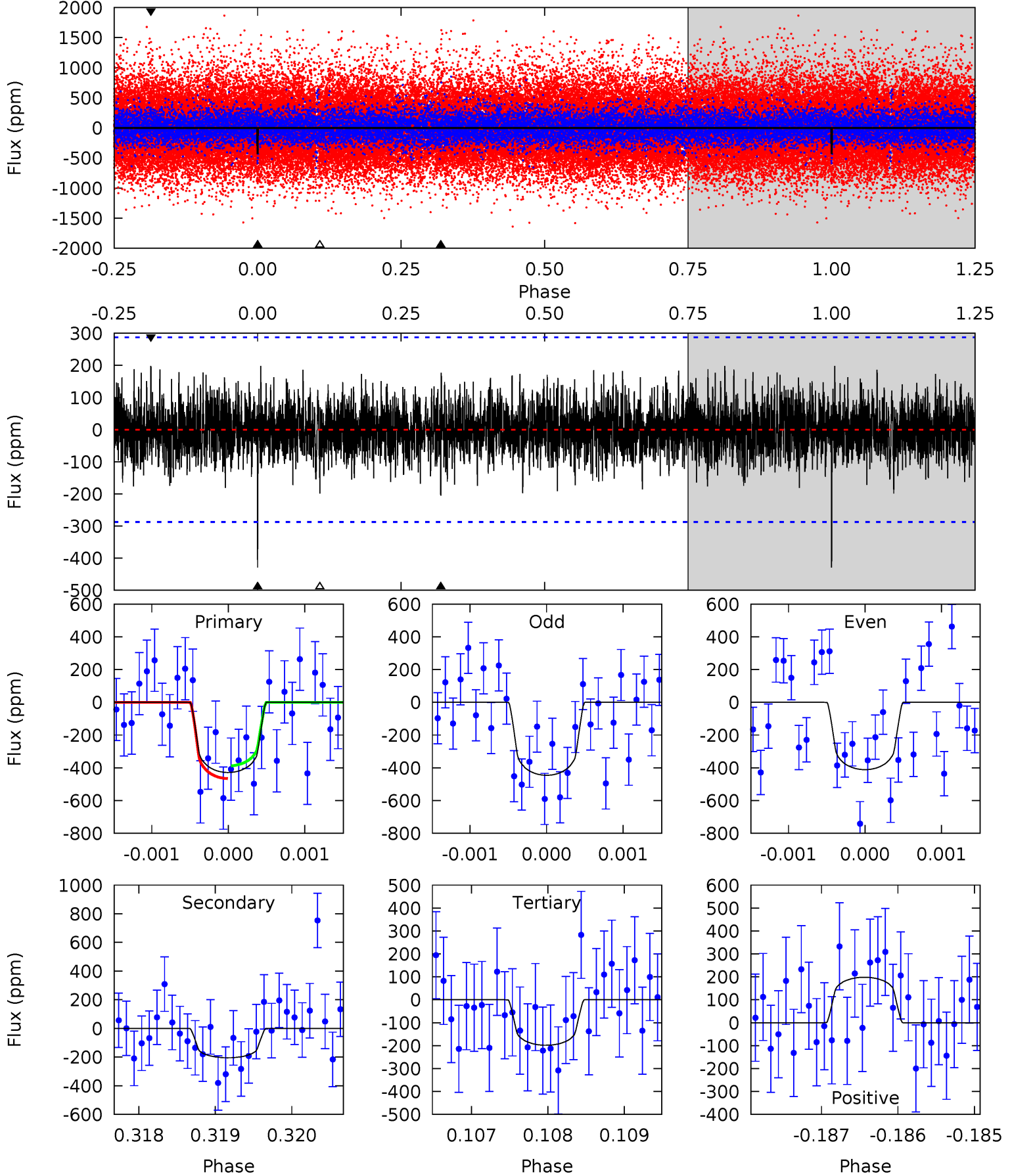
TCE 012456062-01 P=215.299045 Days $T_0=238.045611$ (BKJD)



DV Model-Shift Uniqueness Test

012456062-01, P = 215.301708 Days, E = 22.737648 Days

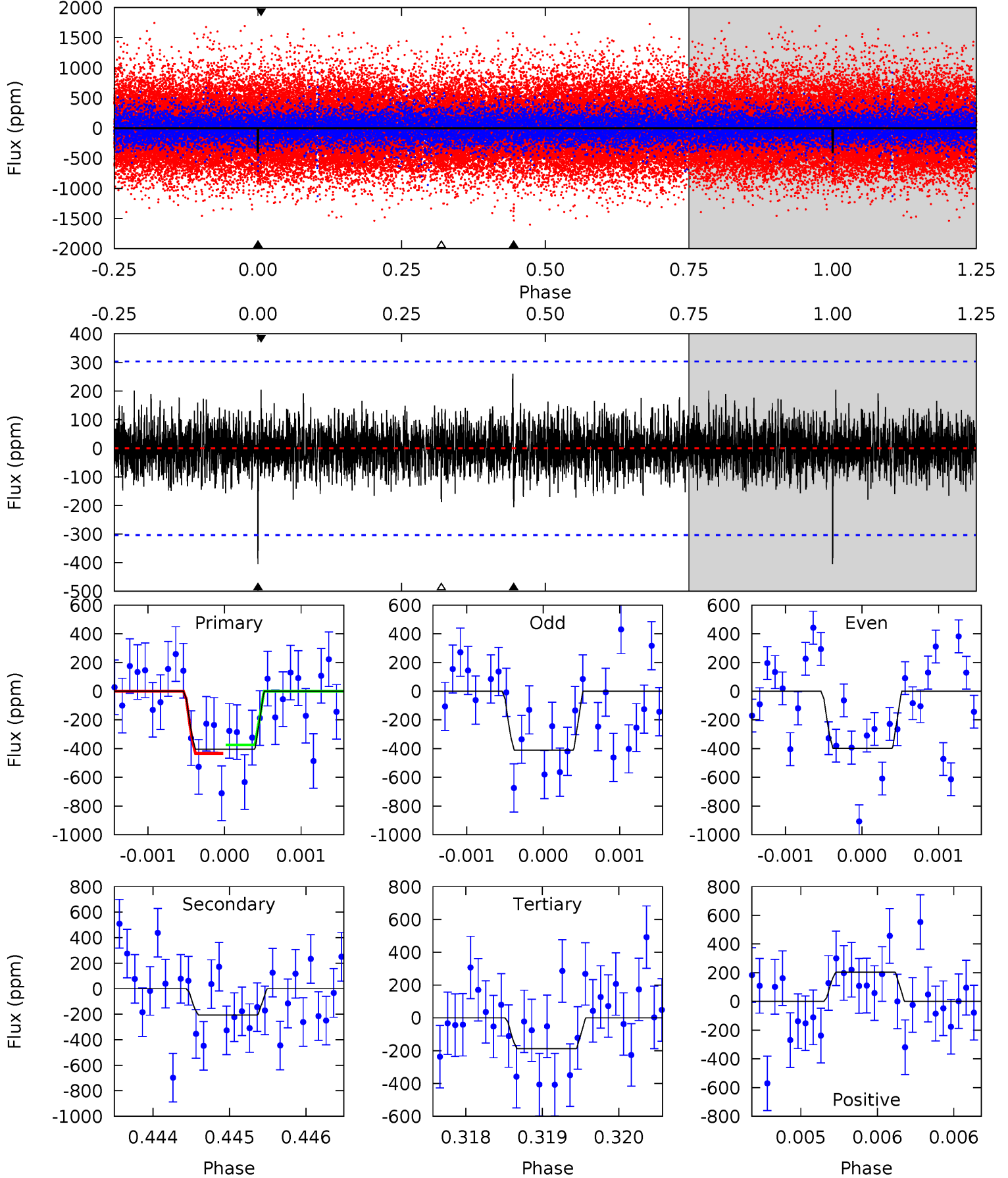
| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 8.16 | 3.90 | 3.78 | 3.77 | 5.47 | 3.32 | 1.12 | 4.38 | 4.39 | 0.12 | 0.13 | 0.33 | 0.91 | 0.32 | 0.74 |



Alt Model-Shift Uniqueness Test

012456062-01, P = 215.299045 Days, E = 22.746566 Days

| Pri | Sec | Ter | Pos | FA ₁ | FA ₂ | F _{Red} | Pri-Ter | Pri-Pos | Sec-Ter | Sec-Pos | Odd-Evn | DMM | Shape | TAT |
|------|------|------|------|-----------------|-----------------|------------------|---------|---------|---------|---------|---------|------|-------|------|
| 7.31 | 3.72 | 3.41 | 3.69 | 5.49 | 3.35 | 1.00 | 3.90 | 3.61 | 0.32 | 0.03 | 0.10 | 0.88 | 0.39 | 0.54 |



Stellar Parameters For KIC 012456062

| | $T_{\text{eff}}(K)$ | $\log(g)$ | [Fe/H] | $R (R_{\odot})$ | $M(M_{\odot})$ | $p_{\star} (\text{g}\cdot\text{cm}^{-3})$ |
|--------|----------------------|---------------------------|----------------------------|---------------------------|---------------------------|---|
| | 6092^{+163}_{-200} | $4.496^{+0.054}_{-0.216}$ | $-0.220^{+0.300}_{-0.300}$ | $0.943^{+0.303}_{-0.101}$ | $1.016^{+0.139}_{-0.139}$ | $1.707^{+0.382}_{-0.904}$ |
| | +3%/-3% | +1%/-5% | +136%/-136% | +32%/-11% | +14%/-14% | +22%/-53% |
| Source | PHO1 | KIC0 | KIC0 | DSEP | | |

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 012456062-01 / KOI

| Detrend | Depth (ppm) | $R_p (R_{\oplus})$ | $T_{max} (K)$ | $T_{obs} (K)$ | A_{obs} |
|---------|---------------|------------------------|-------------------|-----------------------|-------------------------|
| DV | -205 ± 53 | $4.07^{+4.05}_{-2.92}$ | 443^{+37}_{-21} | 4042^{+2942}_{-803} | 3228^{+32081}_{-2453} |
| Alt. | -206 ± 55 | $4.51^{+4.05}_{-2.98}$ | 443^{+33}_{-23} | 3890^{+2059}_{-757} | 2666^{+19827}_{-1963} |

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

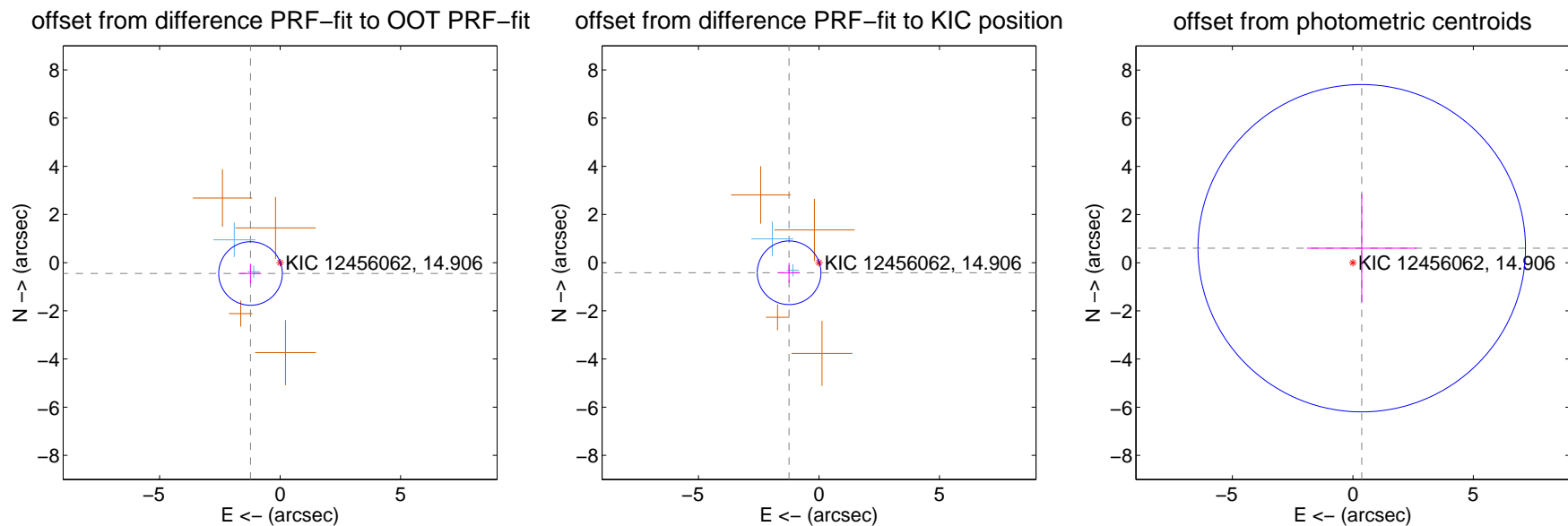
DV Centroid Data

Supplemental centroid analysis for 012456062-01. Kepler magnitude: 14.91. Transit SNR 6.92

There are 2 quarters with good PRF difference image offsets

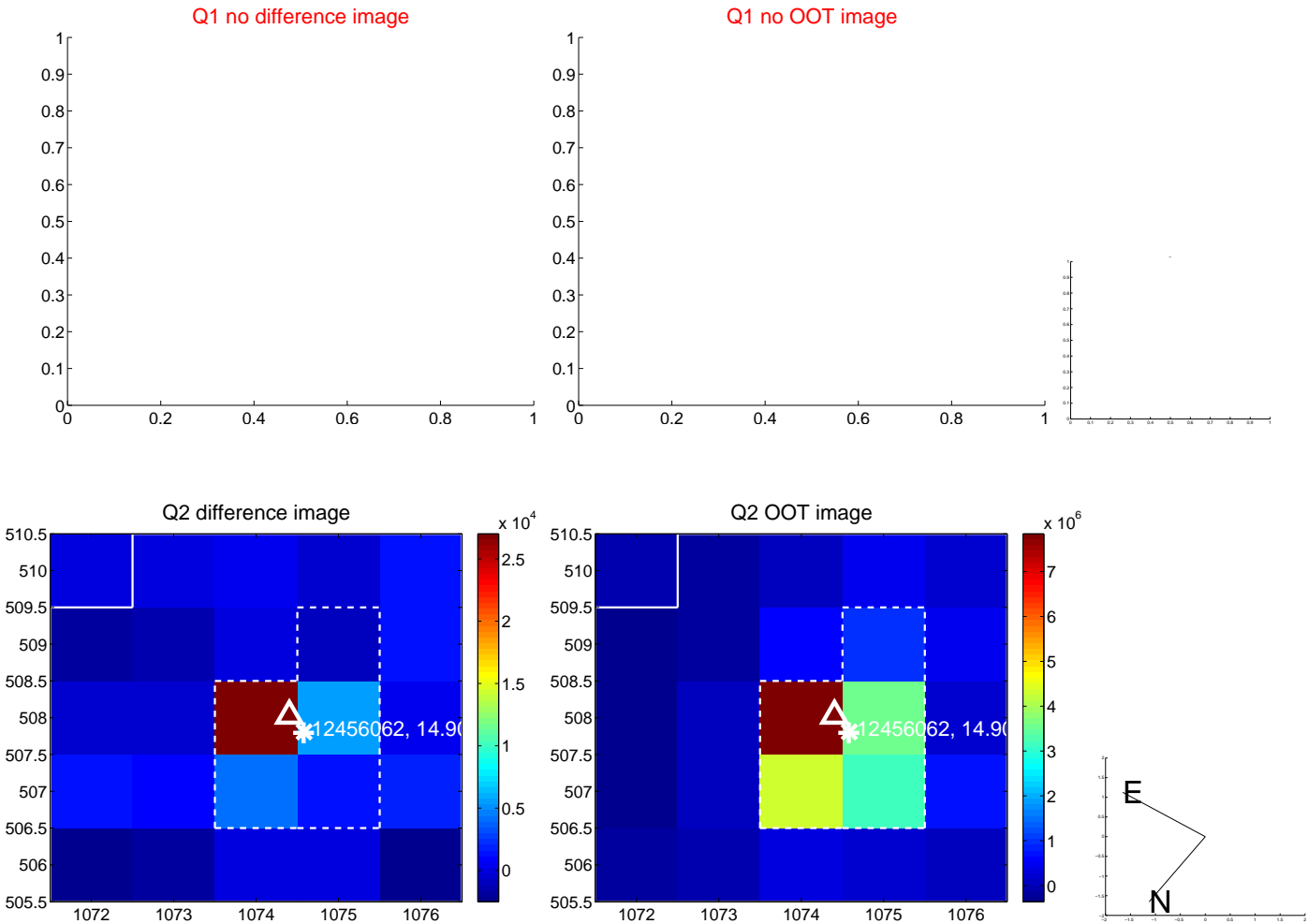
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

| | Distance in arcsec | Distance / σ | Δ RA | Δ Dec |
|---|--------------------|---------------------|-------------------|--------------------|
| PRF-fit source offset from OOT | 1.308 ± 0.440 | 2.97 | 1.228 ± 0.444 | -0.450 ± 0.406 |
| PRF-fit source offset from KIC position | 1.310 ± 0.440 | 2.97 | 1.240 ± 0.444 | -0.421 ± 0.406 |
| photometric centroid source offset | 0.71 ± 2.27 | 0.31 | -0.37 ± 2.28 | 0.60 ± 2.26 |

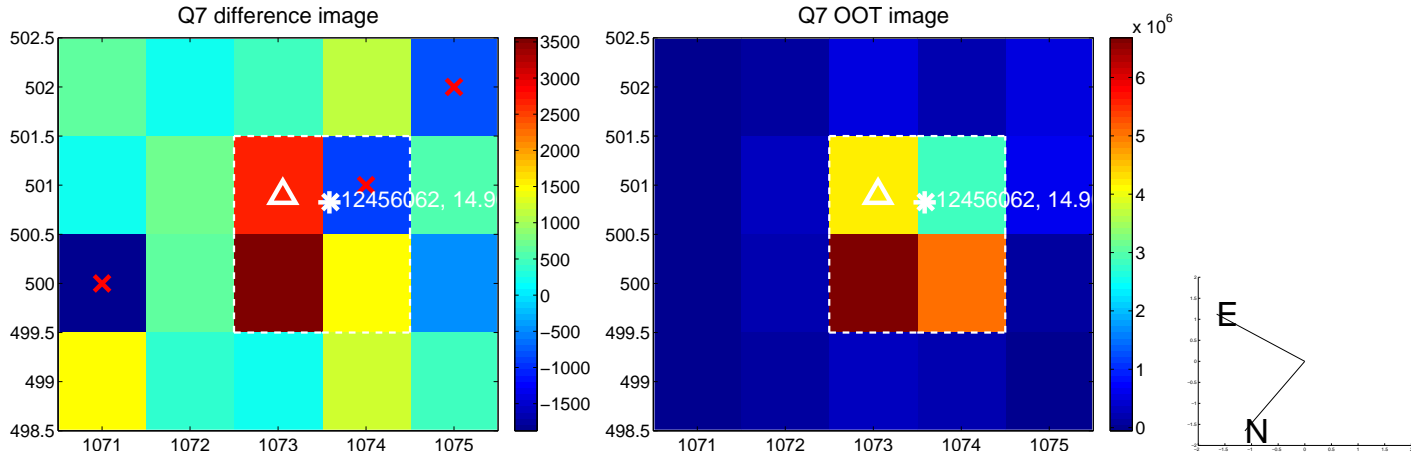
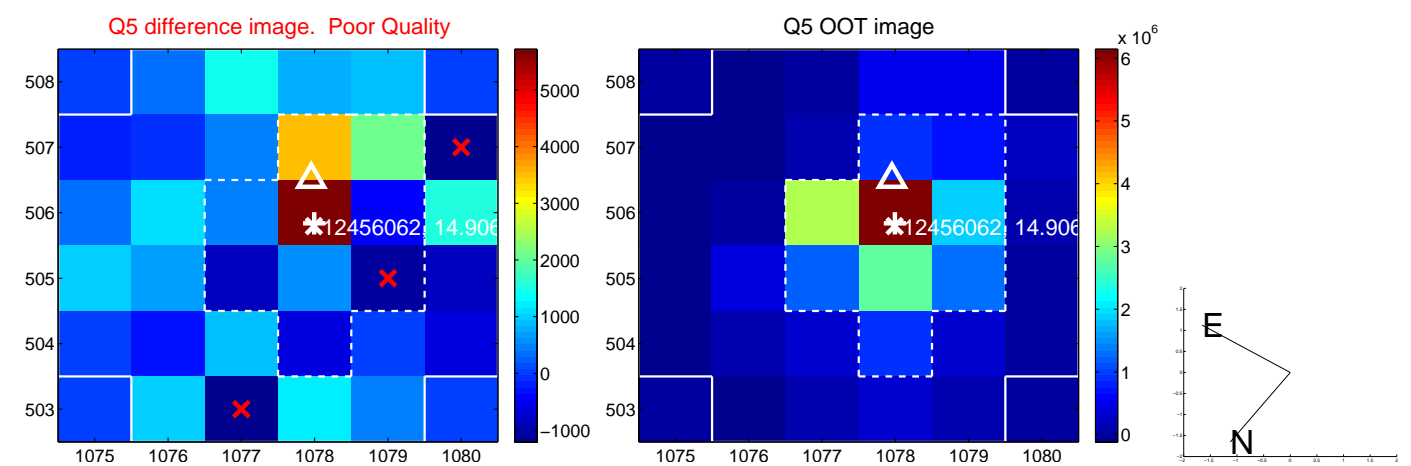


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

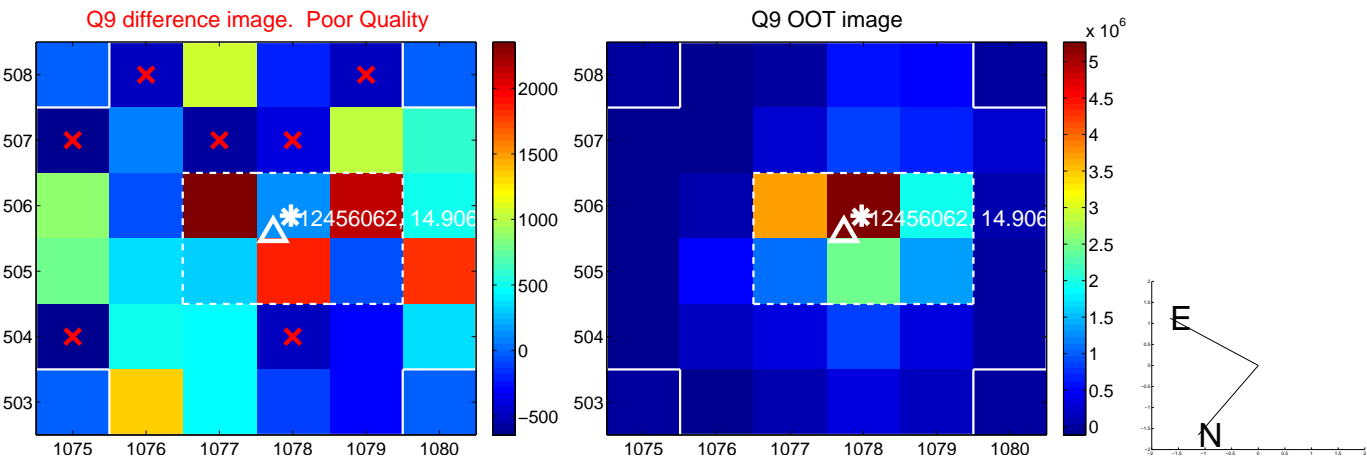
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



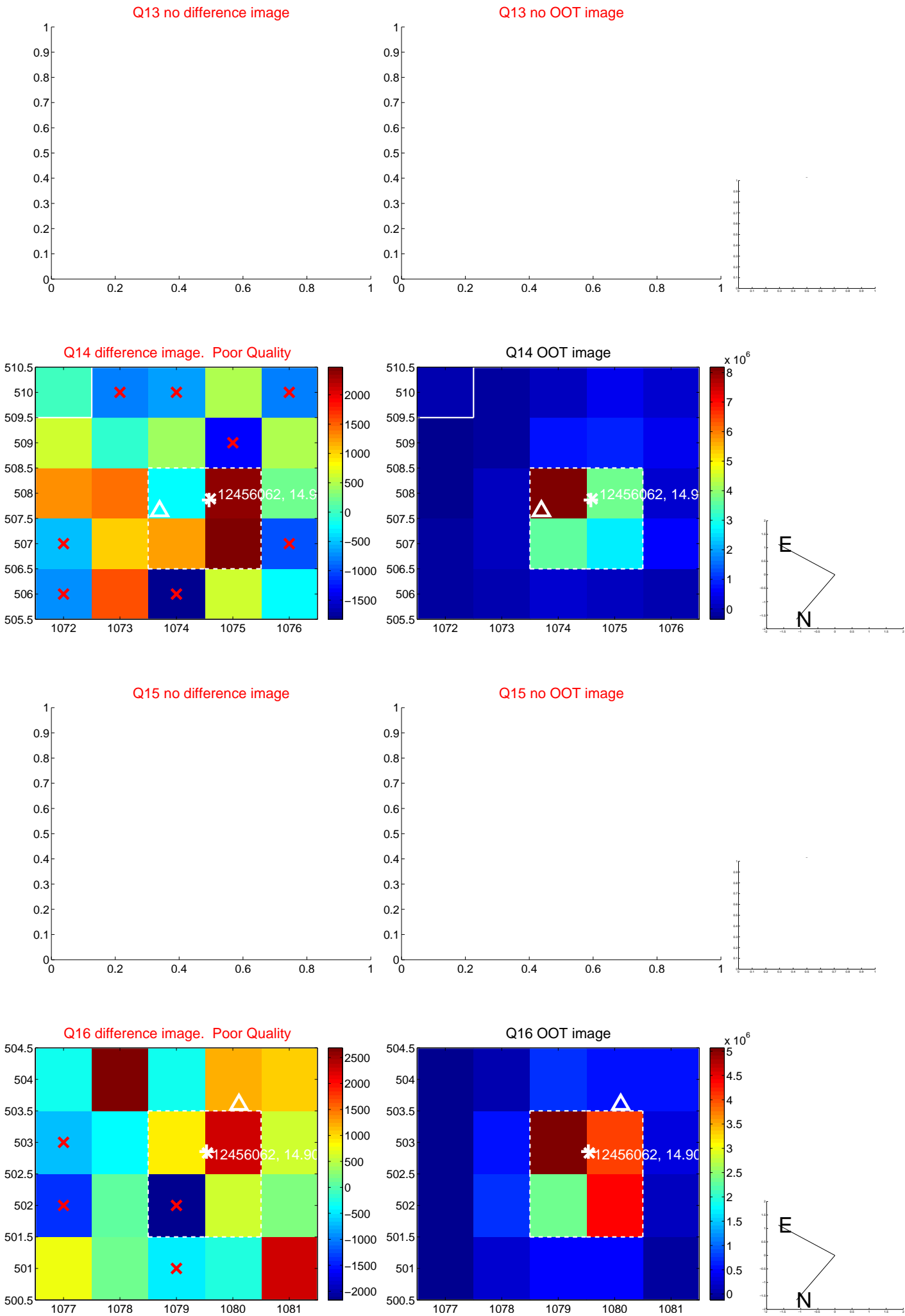
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



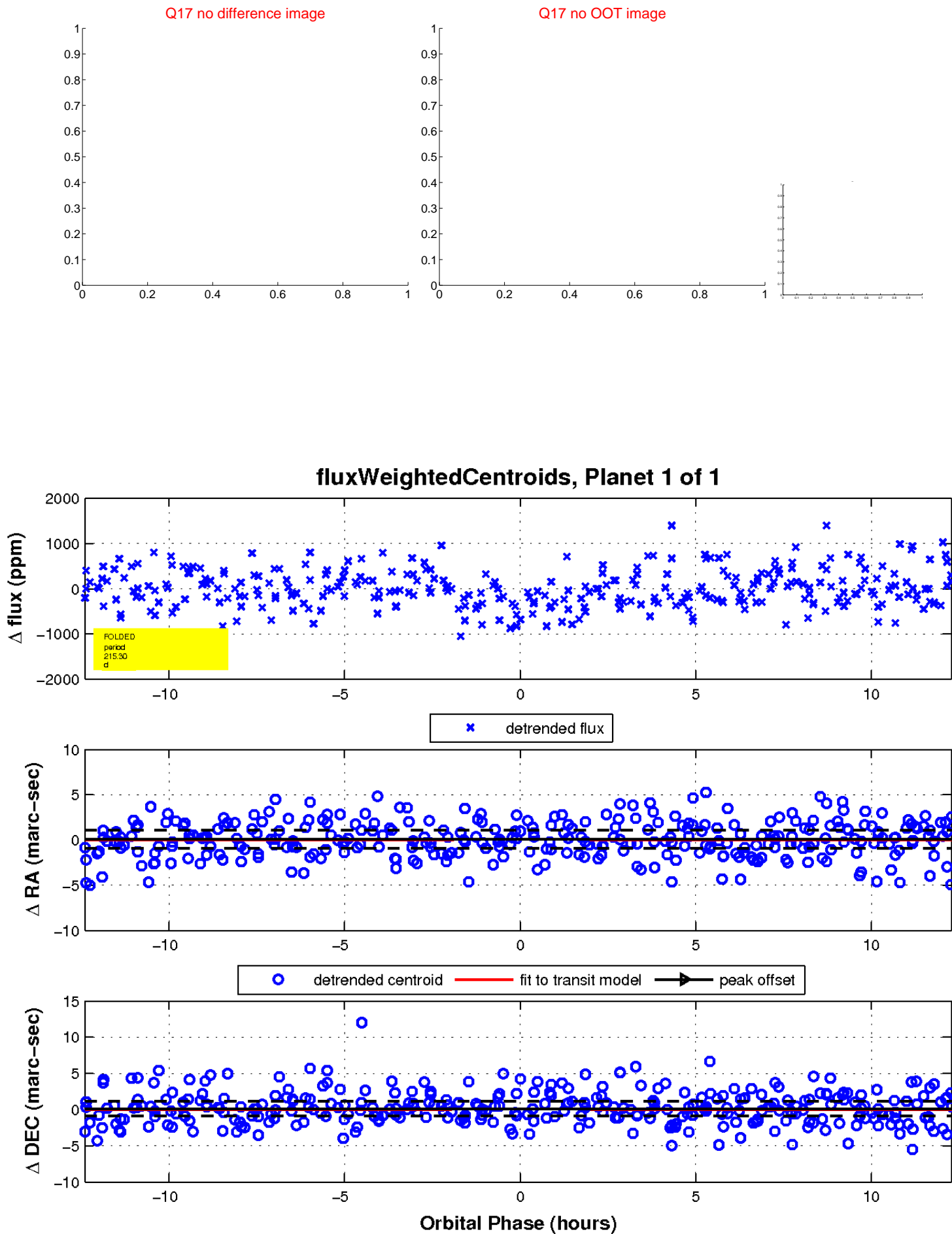
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

